

Claims:

1. A process for the simultaneous production of xylitol and ethanol from a hydrolyzed lignocellulose-containing material, characterized in that the starting material is fermented with a yeast strain which is capable of converting free-xylose to xylitol and the free hexoses present to ethanol and yeast, the ethanol produced is recovered and xylitol is chromatographically separated from the remaining xylitol solution.

2. A process according to Claim 1, characterized in that the starting material is extracted, the extracted solution is fermented to convert xylose into xylitol and a chromatographic separation and crystallization are carried out on the xylitol solution and a final hydrolysis is carried out on the extracted mass, said mass is fermented and the ethanol produced is recovered.

3. A process according to Claim 1, characterized in that a xylan-containing lignocellulose, such as birch or grain hulls, is used as a starting material.

4. A process according to Claim 1, characterized in that sulphite waste liquor is used as a starting material.

5. A process according to Claim 1, characterized in that pure xylitol is crystallized from the xylitol-rich fraction obtained in the chromatography step.

6. A process according to Claim 1, characterized in that the yeast cells are removed prior or subsequent to the distillation.

7. A process according to Claim 1, characterized in that the yeast strain is of the

pcr
stage 2

pos
recitation
of step

Sub
A3

genus Candida or Debaryomyces.

8. A process according to Claim 1 or 7, characterized in that the yeast is a Candida tropicalis species and is preferably Candida tropicalis ATCC 9968.

9. A process according to Claim 1, characterized in that the yeast is a Debaryomyces hansenii species.

10. A process according to Claim 1, characterized in that the ethanol is recovered by distillation.

11. A process according to Claim 1, characterized in that the hydrolysis is carried out by steam explosion and enzymatic final hydrolysis.

12. A process according to Claim 1, characterized in that the chromatographic separation is carried out by using a strong cation-exchanging resin as the stationary phase.

13. A process according to Claim 1, characterized in that the fermentation is carried out at a pH of about 4 - 7, preferably about 5.7, and at a temperature of about 10° - 45°C, preferably about 25 - 35°C.

14. A process according to Claim 2, characterized in that the final hydrolysis of the extracted mass is carried out enzymatically.

7 deposit

Sub
A3
concl'd

Add E6

Sub
A4

add
B1

add
C1

add
F1